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10/743,595	12/22/2003	Harald van Kampen	Kampen 1-13	7575
46900 7590 12/23/2008 MENDELSON & ASSOCIATES, P.C. 1500 JOHN F. KENNEDY BLVD., SUITE 405 PHILADELPHIA, PA 19102				
EXAMINER				
LOO, JUVENA W				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/743,595

Applicant(s)

VAN KAMPEN ET AL.

Examiner

JUVENA LOO

Art Unit

2416

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 19 and 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-5, 7-14, 16-18, and 20 is/are rejected.
- 7) ☒ Claim(s) 6, 15, 22 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/808)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 – 4, 7, 8, 9, 10, 12, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linskog et al. (US 2002/0132603 A1) in view of Romans (US 2002/0019215 A1).

Regarding claim 1, *at a station of a contention-based WLAN system in which the station is adapted to operate in awake and doze states* (Linskog: see “The invention refers...at least one access point” in Abstract), *a method comprising:*

(A) the station transitioning from the doze state to the awake state (Linskog: see “Upon an order from the PC...with “Power Management field” set to active for 802.11” in page 3, section 0057); *and*

(B) the station transmits to an access point (AP) of the system a first frame, wherein a designated bit in the first frame informs the AP that the station will remain in

the awake state and be available to receive at least one transmission from the AP (Lindskog: see "Upon an order from the PC...with "Power Management field" set to active for 802.11" in page 3, section 0057), *wherein:*

step (A) comprises:

starting a timer when the station has transitioned into the doze state (Romans: see Figure 5, Wakeup timer expired); *and*

if there is no data available for transmission from the station to the AP, then transitioning the station from the doze state to the awake state when the timer reaches a threshold value (Romans: see Figure 5, Asleep, Wakeup timer expired, and Awake:Waiting for Control Point Beacon; see also "A PS station will wake-up periodically to receive...CPB transmissions" in pages 3-4, section 0065; see also "From the countdown counter...at the start of the broadcast period" in page 4, section 0087); *and*

step (B) is performed after the station has transitioned to the awake state due to the timer reaching the threshold value but before the station receives a next frame from the AP (Romans: see Figure 5 and "Stations using power saving...Mode flag, set appropriately" in page 2, section 0030).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Lindskog et al. by using the timer feature, as taught by Romans, in order to know when to wake-up from sleep to communication with the

access point or other stations (Romans: see page 1, section 0012 and page 4, section 0087).

Regarding claim 2, *wherein the contention-based WLAN system conforms to an IEEE 802.11 standard* (Lindskog: see "The invention refers to...supporting device power states" in Abstract).

Regarding claim 3, *wherein the contention-based WLAN system conforms to an extension of an IEEE 802.11 standard* (Lindskog: see "The invention refers to...supporting device power states" in Abstract).

Regarding claim 4, *wherein steps (A) and (B) are performed independent of any beacon schedule for the system* (Lindskog: see "It will be appreciated...of the mobile terminal" in page 3, section 0054).

Regarding claim 7, *wherein:*

step (A) further comprises:

if data has become available for transmission from the station to the AP, then transitioning the station to the awake state upon said availability (Lindskog: see "Sleep to Active Transition...mobile terminal for 802.11" in page 3, sections 0056 – 0061); *and*

for step (B), the first frame corresponds to the data (Lindskog: see "Sleep to Active Transition...mobile terminal for 802.11" in page 3, sections 0056 – 0061).

Regarding claim 8, wherein:

for step (B), the first frame is a null frame (Lindskog: see "Sleep to Active Transition...mobile terminal for 802.11" in page 3, sections 0056 – 0061).

Regarding claim 9, the threshold value is less than an inter-beacon time interval (Romans: see "A PS station will wake-up periodically to receive...CPB transmissions" in pages 3-4, section 0065; see also "From the countdown counter...at the start of the broadcast period" in page 4, section 0087).

Regarding claim 10, wherein the designated bit is a power management bit of an IEEE 802.11 standard (Lindskog: see "Upon an order from the PC...fillth "Power Management field" set to active for 802.11" in page 3, section 0057).

Regarding claim 12, further comprising:

(C) with the station in the awake state and the AP informed that the station is in the awake state, transmitting to the AP a closing frame, wherein a designated bit in the closing frame informs the AP that the station will transition to the doze state (Lindskog: see "Active to Sleep Transition...the states D1, D2, or D3" in page 3, sections 0050 - 0051); *and*

(D) transitioning the station from the awake state to the doze state (Lindskog: see "Active to Sleep Transition...the states D1, D2, or D3" in page 3, sections 0050 - 0051).

Regarding claim 18, *a station, in a contention-based WLAN system, adapted to operate in awake and doze states comprising:*

(A) a processor, wherein, with the station in the doze state, the processor configures the station to transition from the doze state to the awake state (Lindskog: see "Upon an order from the PC...filth "Power Management field" set to active for 802.11" in page 3, section 0057); *and*

(B) a transceiver, wherein the processor configures the transceiver to transmit to an access point (AP) of the system a first frame (Lindskog: see "Upon an order from the PC...filth "Power Management field" set to active for 802.11" in page 3, section 0057), *wherein a designated bit in the first frame informs the AP that the station will remain in the awake state and be available to receive at least one transmission from the AP* (Lindskog: see "Upon an order from the PC...filth "Power Management field" set to active for 802.11" in page 3, section 0057), *wherein:*

the processor is adapted to:

start a timer when the station has transitioned into the doze state (Romans: see Figure 5, Wakeup timer expired); *and*

if there is no data available for transmission from the station to the AP, then configure the station to transition from the doze state to the awake state when the timer reaches a threshold value (Romans: see Figure 5, Asleep, Wakeup timer expired, and

Awake:Waiting for Control Point Beacon; see also "A PS station will wake-up periodically to receive...CPB transmissions" in pages 3-4, section 0065; see also "From the countdown counter...at the start of the broadcast period" in page 4, section 0087);
and

the first frame is transmitted after the station has transitioned to the awake state due to the timer reaching the threshold value but before the station receives a next frame from the AP (Romans: see Figure 5 and "Stations using power saving...Mode flag, set appropriately" in page 2, section 0030).

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Linskog et al. (US 2002/0132603 A1) in view of Romans (US 2002/0019215 A1) and further in view of Ho et al. (US 2002/0071449 A1).

Regarding claim 5, *further comprising the station receives from the AP an acknowledgement frame corresponding to the first frame (Ho: see Figure 4, 465 – Acknowledgment frame with More Data = 1; see also "In response to the poll request frame 460, the HC transmits a QoS CF-Ack+CF-Poll frame 465 to station 3. The CF-Ack is used as an acknowledgment for the poll request frame 460" in page 7, section 0076).*

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Lindskog et al. by using the features, as taught by Ho et al., in order to provide acknowledgement of received frames (Ho: see page 7, section 0076).

4. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lindskog et al. (US 2002/0132603 A1) in view of Romans (US 2002/0019215 A1) and further in view of Lu et al. (US 2003/0185241 A1).

Regarding claim 11, wherein the designated bit is a more data bit of an IEEE 802.11 standard (Lu: see page 4, section 0039).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Lindskog et al. by using the "More Data" bit feature, as taught by Lu, in order to inform a station that more data are buffered for it at the access point (Lu: page 4, section 0039).

5. Claims 13, 14, 16, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindskog et al. (US 2002/0132603 A1) in view of Ho et al. (US 2002/0071449 A1) and further in view of Lu et al. (US 2003/0185241 A1).

Regarding claim 13, at an access point (AP) of a contention-based WLAN system in which a station is adapted to operate in awake and doze states, a method comprising:

(A) receiving from the station a first frame, wherein a more data bit of an IEEE 802.11 standard in the first frame informs the AP that the station will remain in the awake state and be available to receive at least one transmission from the AP (Lindskog: see "Upon an order from the PC...with "Power Management field" set to active for 802.11" in page 3, section 0057).

However, Lindskog does not disclose the feature: *(B) transmitting to the station an acknowledgement frame corresponding to the first frame, wherein a designated bit in the acknowledgement frame informs the station whether the AP has data to transmit to the station.*

Ho discloses the feature:

(B) transmitting to the station an acknowledgement frame corresponding to the first frame, wherein a designated bit in the acknowledgement frame (Ho: see page 6, section 0069; see also Figure 4, 465 – Acknowledgment frame with More Data = 1; see also "In response to the poll request frame 460, the HC transmits a QoS CF-Ack+CF-

Poll frame 465 to station 3. The CF-Ack is used as an acknowledgment for the poll request frame 460" in page 7, section 0076).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Lindskog by using the features, as taught by Ho, in order to provide for the use of tokens (received frames with some special qualifications) to determine if a receiving station has the right to transmit next (Ho: see page 6, section 0067).

In addition, Lu discloses the feature:

wherein a designated bit in the acknowledgement frame informs the station whether the AP has data to transmit to the station (Lu: see page 4, section 0039).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Lindskog et al. with Ho et al. by using the features, as taught by Lu et al., in order to indicate to the addressed station that more data are buffered at the access point (Lu: see page 4, section 0039).

Regarding claim 14, *wherein the contention-based WLAN system conforms to an extension of the IEEE 802.11 standard* (Lindskog: see "The invention refers to...supporting device power states" in Abstract).

Regarding claim 16, *wherein steps (A) and (B) are performed independent of any beacon schedule for the system* (Lindskog: see "It will be appreciated...of the mobile terminal" in page 3, section 0054).

Regarding claim 17, *wherein:*

when data is available for transmission from the station to the AP, the first frame corresponds to the data (Lindskog: see "Sleep to Active Transition...mobile terminal for 802.11" in page 3, sections 0056 – 0061); *and*

when there is no data available for transmission from the station to the AP, the first frame is a null frame (Lindskog: see "Sleep to Active Transition...mobile terminal for 802.11" in page 3, sections 0056 – 0061).

Regarding claim 20, *an access point (AP) of a contention-based WLAN system* (Lindskog: see Figure 2) *in which a station is adapted to operate in awake and doze states* (Lindskog: see Figure 2), *the AP comprising a processor and a transceiver, wherein the processor configures the transceiver:*

(A) to receive from the station a first frame, wherein a designated bit in the first frame informs the AP that the station will remain in the awake state and be available to receive at least one transmission from the AP (Lindskog: see "Upon an order from the PC...fifth "Power Management field" set to active for 802.11" in page 3, section 0057).

However, Lindskog et al. does not disclose the feature: *(B) transmitting to the station an acknowledgement frame corresponding to the first frame, wherein a designated bit in the acknowledgement frame informs the station whether the AP has data to transmit to the station.*

Ho discloses the feature:

(B) transmitting to the station an acknowledgement frame corresponding to the first frame, wherein a designated bit in the acknowledgement frame (Ho: see page 6, section 0069; see also Figure 4, 465 – Acknowledgment frame with More Data = 1; see also “In response to the poll request frame 460, the HC transmits a QoS CF-Ack+CF-Poll frame 465 to station 3. The CF-Ack is used as an acknowledgment for the poll request frame 460” in page 7, section 0076).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Lindskog by using the features, as taught by Ho, in order to provide for the use of tokens (received frames with some special qualifications) to determine if a receiving station has the right to transmit next (Ho: see page 6, section 0067).

In addition, Lu discloses the feature:

wherein a designated bit in the acknowledgement frame informs the station whether the AP has data to transmit to the station (Lu: see page 4, section 0039).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Lindskog et al. with Ho et al. by using the features, as taught by Lu et al., in order to indicate to the addressed station that more data are buffered at the access point (Lu: see page 4, section 0039).

Allowable Subject Matter

6. Claims 6, 15, 22, and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 6, wherein a more data bit of an IEEE 802.11 standard in the acknowledgement frame informs the station whether the AP has data to transmit to the station;

if the more data bit indicates that the AP has the data, then the method comprises keeping the station in the awake state and available to receive from the AP at least one frame corresponding to the data; and

if the more data bit indicates that the AP does not have the data, then the method comprises transitioning the station to the doze state upon receipt of the acknowledgement frame.

The prior arts do not explicitly disclose the features:

if the more data bit indicates that the AP has the data, then the method comprises keeping the station in the awake state and available to receive from the AP at least one frame corresponding to the data; and

if the more data bit indicates that the AP does not have the data, then the method comprises transitioning the station to the doze state upon receipt of the acknowledgement frame.

Regarding claim 15, *wherein the designated bit is a more data bit of the IEEE 802.11 standard; and if the designated bit indicates that the AP has the data, then the method comprises transmitting to the station at least one frame corresponding to the data, wherein the station continues to remain in the awake state to be available to receive said at least one frame.*

The prior arts do not explicitly disclose the features:

if the designated bit indicates that the AP has the data, then the method comprises transmitting to the station at least one frame corresponding to the data, wherein the station continues to remain in the awake state to be available to receive said at least one frame.

Regarding claim 22, wherein: the designated bit is a more data bit of the IEEE 802.11 standard; and

If the designated bit indicates that the AP has the data, then the processor configures the transceiver to transmit to the station at least one frame corresponding to the data, wherein the station continues to remain in the awake state to be available to receive said at least one frame.

The prior arts do not explicitly disclose the features:

If the designated bit indicates that the AP has the data, then the processor configures the transceiver to transmit to the station at least one frame corresponding to the data, wherein the station continues to remain in the awake state to be available to receive said at least one frame.

Regarding claim 23, wherein: the processor configures the transceiver to receiving from the AP an acknowledgement frame corresponding to the first frame;

a more data bit of an IEEE 802.11 standard in the acknowledgement frame informs the station whether the AP has data to transmit to the station;

if the more data bit indicates that the AP has the data, then the processor configures the station to remain in the awake state to be available to receive from the AP at least one frame corresponding to the data; and

if the more data bit indicates that the AP does not have the data, then the processor configures the station to transition to the doze state upon receipt of the acknowledgement frame.

The prior arts do not explicitly disclose the features:

if the more data bit indicates that the AP has the data, then the processor configures the station to remain in the awake state to be available to receive from the AP at least one frame corresponding to the data; and

if the more data bit indicates that the AP does not have the data, then the processor configures the station to transition to the doze state upon receipt of the acknowledgement frame.

Conclusion

8. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUVENA LOO whose telephone number is (571)270-1974. The examiner can normally be reached on Monday - Friday: 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JUVENA LOO/
Examiner
Art Unit 2416

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December 19, 2008

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Supervisory Patent Examiner, Art Unit 2416